



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,700	09/14/2001	Margo Gisselberg	34114.8005US	8619

25096 7590 07/15/2004

PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER

HUANG, SIHONG

ART UNIT	PAPER NUMBER
----------	--------------

2632

DATE MAILED: 07/15/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/954,700

Applicant(s)

GISSELBERG ET AL.

Examiner

Sihong Huang

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4,7,8,9</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2632

DETAILED ACTION

1. Applicant's election without traverse of claims 1-22 and 24-26 in the reply filed on April 12, 2004 is acknowledged. Claims 23 and 27 have been withdrawn, and non-elected claims 28-39 have been canceled. An office action is as followed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 25 is rejected under 35 U.S.C. 102(e) as being anticipated by Mate et al. (US Pub. No. 2002/0193685 A1).

The applied reference has a common inventor Steven C. Dimmer with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 25, Mate et al. (hereinafter Mate) discloses a resonating marker assembly (30, see Fig. 3), comprising: a core (46); a wire coil (48) disposed around the core; a capacitor (50) operatively connected to the wire coil to form a signal elements that generates a magnetic field with a selected resonant frequency in response to a specific stimulus; and an inert

Art Unit: 2632

encapsulation member (52) encapsulating the core, the wire coil, and the capacitor forming an activatable unit implantable in a patient through an introducer needle (see [0041]).

4. Claims 19, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Mejia et al. (US Pat. No. 6,400,338).

Regarding claim 19, Mejia et al. (hereinafter Mejia) discloses a miniature resonating marker assembly (10) having a geometric center (inherently included), comprising: a core (12) having an elongated central portion (16, see Figs. 1, 2A and 3), a first cap (42, left side of coil-forming portion 16) having a first thickness, and a second cap (including end portion 42, transition portion 44 and IC support portion 18, see the right side of coil-forming portion 16 in Figs. 1, 2A, 3 and 9A) having a second thickness (see figures), wherein the first thickness is different than the second thickness (clearly shown by the drawings); a wire coil (22) disposed around the central portion (16) of the core between the first and second caps; and a capacitor (28) connected to the wire coil operative to form a signal element that generates a magnetic field with a selected resonant frequency in response to a specific stimulus (see col. 1).

Regarding claim 24, Mejia discloses a resonating marker assembly (10), comprising: a ferromagnetic core (12) having a first end and a second end (see drawings); a wire coil (22) disposed around the ferromagnetic core; a capacitor (28) positioned at the first end of the core (right side of drawings); and a segment (end portion 42) at the second end (left side of the drawings) of the core that projects outwardly with respect to the longitudinal axis of the core (the end portion 42 of core 12 at the left side can be

considered projects outwardly with respect to the longitudinal axis of the core, see Fig. 1).

Regarding claim 25, Mejia discloses a resonating marker assembly (10), comprising: a core (12); a wire coil (22) disposed around the core; a capacitor (28) operatively connected to the wire coil to form a signal elements that generates a magnetic field with a selected resonant frequency in response to a specific stimulus; and an inert encapsulation member (34) encapsulating the core, the wire coil, and the capacitor forming an activatable unit implantable in a patient through an introducer needle (col. 1, lines 5-60).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann et al. (US Pat. No. 3,836,842).

Regarding claims 1 and 12, Zimmermann et al. (hereinafter Zimmermann) discloses a resonating marker assembly (see Figs. 1a, 1b and 1c), comprising: a signal element (Fig. 1c) comprising a core (5), a wire coil (4) disposed around the core, and a capacitor (6) connected to the wire coil, the signal element generating a magnetic field with a selected resonant frequency in response to a specific stimulus (col. 4, lines 44-68), and the magnetic field having a magnetic center along a first axis of the core (inherently included property); and an inert encapsulation member (3) encapsulating the signal element, the

Art Unit: 2632

encapsulation member and the signal element therein defining a unit having a selected geometric shape having a geometric center (inherently included property). Although Zimmermann does not specifically spell out that the geometric center being coincident with the magnetic center along at least the first axis of the core, it appears that Zimmermann in Fig. 1b shows such limitation. Zimmermann does not disclose a miniature assembly. However, the size of the resonating marker assembly is proportional to its signal strength for communicating with the interrogator. Depending on the specific application, smaller size resonating marker assembly with smaller size electrical elements that provides a shorter communication range is do-able. And therefore, it would have been obvious to an ordinary person skilled in the art that the resonating marker assembly of Zimmermann can be made smaller in size for different application such as that it does not require long range communication path between the interrogator and the resonating marker assembly.

Regarding claims 2 and 3, Zimmermann discloses a ferrite magnetically soft core which has high permeability greater than 1.0 (col. 5, lines 52-53).

7. Claims 4-9 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann et al. in view of Taylor et al. (US Pat. No. 5,211,129) or Mejia et al. (US Pat. No. 6,400,338).

Regarding claims 4-6, Zimmermann does not disclose that the core has a rod portion positioned within the coil and a pair of enlarged ferromagnetic endcaps connected to the rod portion, the endcaps having a relative permeability greater than 1, the coil disposed between the endcaps. However, Taylor et al. (hereinafter Taylor) discloses such (see Fig.

Art Unit: 2632

8B and col. 8, lines 17-22), and further in Figs. 8A, 8C and 8D discloses other variations (with or without core endcaps) on the embodiment. Mejia et al. (hereinafter Mejia) discloses that providing a reduced sized center portion with enlarged end portions to hold the coil within the center portion of the core is a well known technique in the art (see Figs. 1 and 3). Thus, it would have been obvious to an ordinary person skilled in the art to modify the core of Zimmermann with the teaching of Taylor or Mejia to have the claimed shape so that the coil would be held within the reduced cross-section center rod portion due to the enlarged end portions. Since both Taylor and Mejia consider the center and end portions being the core, the material of the end portions would have permeability greater than 1.

Regarding claims 7-9, since Mejia discloses a unitary antenna core 12 (including coil-forming portion 16 and IC support portion 18 with a same ferrite material), the volume of material at one end (the end with IC support portion 18) of the core 12 is larger than the other end (the left side of the figures). Thus, it would have been obvious to an ordinary person skilled in the art to modify the core of Zimmermann with the teaching of Mejia to provide a unitary core with an extended support from the core for the capacitor of Zimmermann for an easier and cheaper manufacturing process (col. 7, lines 15-26) and to increase the operational range of the marker due to larger volume of core material to be used (col. 7, lines 27-40).

Regarding claims 15 and 16, the modified assembly does not specifically disclose how to secure/hold the windings of the coil in position onto the core. However, the claimed

methods/techniques are known in the art and therefore an obvious modification to the modified assembly.

Regarding claims 17 and 18, since the assembly of Zimmermann can be modified and made miniature and implantable in or on a patient as taught by Taylor and Mejia, the claimed limitations would have been obvious to an ordinary person skilled in the art.

8. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann in view of Taylor or Mejia as applied to claims 1 and 4-8 above, and further in view of Yoakum (US Pat. No. 6,441,741).

Regarding claims 10 and 11, the modified assembly further differs from the claimed invention in that it does not disclose that the first endcap being axially adjustable over the rod portion and relative to the coil while the second endcap is fixed relative to the rod portion. However, Yoakum discloses that the position of the coil over the core is important for tuning the marker to the desired resonating frequency (col. 4, lines 30-57). Therefore, making one endcap fixed with the other being adjustable for positioning the coil over the core to tune the marker to the specific resonating frequency would have been obvious to an ordinary person skilled in the art, and such technique would have been an obvious modification to the modified assembly of Zimmermann and Taylor or Mejia.

9. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann in view of Yoakum.

Regarding claims 13 and 14, Zimmermann does not disclose a sleeve positioned between the wire coil and the core, the wire coil being wound onto the sleeve, and the sleeve and coil being positioned over the core, wherein the core is disposed within the

sleeve and axially movable relative to the coil to achieve a selected resonant frequency of the assembly. However, Yoakum discloses such (col. 4, lines 23-57). Therefore, it would have been obvious to an ordinary person skilled in the art to provide the technique taught by Yoakum to the assembly of Zimmermann for an easier tuning step.

10. Claims 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mejia et al. 6,400,338).

Regarding claim 20, Mejia discloses a resonating marker assembly as addressed above and further discloses the symmetrical and asymmetrical limitations (see the drawings) and differs from claim 20 in that Mejia does not specifically disclose that the magnetic center along a first axis coincident with the geometric center of the resonating marker assembly. However, because the material of core 12 (including coil-forming portion 16 and IC support portion 18) is the same in all portions (i.e., ferrite), the magnetic center would be spaced from the coil center and shifted to the right of the drawings (see Fig. 9A) due to the volume of the material of core 12 in the right side is larger than the left side, it is possible that the magnetic center is coincident with the geometric center of the resonating marker along a first axis. Therefore, it would have been obvious to an ordinary person skilled in the art to make the resonating marker assembly of Mejia with the magnetic center coincident with the geometric center of the marker assembly for an accurate assembly.

Regarding claim 26, Mejia discloses a resonating marker assembly as addressed above and differs from the claimed invention in that it does not disclose the specific arrangement/position of the capacitor, core and coil. However, such specification is

Art Unit: 2632

merely a matter of design choice on packaging and therefore an obvious modification to the assembly of Mejia.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mejia et al. in view of Yoakum.

Regarding claim 21, Mejia discloses a resonating marker assembly as addressed above and differs from claim 21 in that it does not disclose the first endcap being movable relative to the coil and capacitor for tuning the marker assembly to a selected resonant frequency. However, Yoakum discloses that the position of the coil over the core is important for tuning the marker to the desired resonant frequency (col. 4, lines 30-57). Therefore, making one endcap adjustable for positioning the coil over the core to tune the marker to the specific resonant frequency would have been obvious to an ordinary person skilled in the art, and such technique would have been an obvious modification to the assembly of Mejia.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoakum in view of Taylor or Mejia.

Regarding claim 22, Yoakum discloses a resonating marker assembly (10), comprising: a sleeve (26); a core (30) having a central portion extending through the sleeve (see Fig. 1), and the core being axially movable relative to the sleeve (col. 4, lines 19-57); a wire coil (18, 20) disposed around the sleeve (see Fig. 1); and a capacitor (16) connected to the wire coil proximate to the core to form a signal element that generates a magnetic field with a selected resonant frequency in response to a specific stimulus, the core being axially movable relative to the sleeve and the coil for tuning the marker assembly to a

Art Unit: 2632

selected resonant frequency (col. 4, lines 19-57). Yoakum does not disclose a pair of endcaps. However, Taylor and Mejia disclose such well known feature (see the rejection above for details). Therefore, it would have been obvious to an ordinary person skilled in the art to modify the core of Yoakum to include endcaps as taught by Taylor and Mejia so that the coil with the sleeve is securely positioned over the core.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art references to Brouwers (US 4,992,794), Paul, Jr. (US 4,065,753), Campbell et al. (US 5,840,148), Tanji et al. (US 6,518,884), Droz (US 5,895,235), Price (US 6,734,795), Yoakum (US 5,963,132), Hadden et al. (US 5,223,851), and Castellano et al. (US 6,130,612) are cited to show other resonating marker assembly.

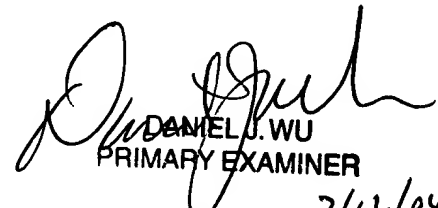
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sihong Huang whose telephone number is 703-305-3966. The examiner can normally be reached on Wed, Thu & Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 703-308-6730. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2632

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Huang
July 9, 2004


DANIEL J. WU
PRIMARY EXAMINER
7/12/04